Order of the Proceedings and Description of the Buildings opened by

Their Majesties THE KING AND QUEEN at CAMBRIDGE

1 March, 1904

ORDER of the Proceedings at the opening of the

SQUIRE LAW LIBRARY
LAW SCHOOL
MEDICAL SCHOOL
BOTANICAL SCHOOL
SEDGWICK MUSEUM

by

Their Majesties

The King and Queen

March 1st, 1904

Cambridge:
Printed at the University Press

Programme

A Procession will be formed under the colonnade of the University Library in the following order:

The Esquire Bedells

The CHANCELLOR

HIS MAJESTY THE KING

The VICE-CHANCELLOR accompanied by the Registrary

The Deputy High Steward

The Representatives in Parliament

The Heads of Colleges

Doctors in the several Faculties

The Public Orator

The Librarian

Professors

Members of the Council of the Senate

The Proctors

The Procession will pass round Senate House Yard, and enter the Senate House by the South Door.

After the Congregation the Procession will leave the Senate House by the South Door in the order in which it entered, and proceed to the gate of Senate House Yard, from which THEIR MAJESTIES and PRINCESS VICTORIA will drive to the Fitzwilliam Museum, where luncheon will be served at 1.15.

Programme

Guests, who have received invitations to luncheon in the Hall of King's College at 1.15, can enter the College direct from Senate House Yard.

THEIR MAJESTIES and PRINCESS VICTORIA, accompanied by the Chancellor, will leave the Fitzwilliam Museum at 2.30, and drive by way of Trumpington Street and Pembroke Street to the MEDICAL SCHOOL, where they will be received by the Regius Professor of Physic, the Downing Professor of Medicine, the Professor of Surgery, and the Professor of Pathology, and conducted into the HUMPHRY MUSEUM, and other parts of the building.

The inspection over, THEIR MAJESTIES will proceed to the main entrance of the SQUIRE LAW LIBRARY, and will inspect that building and the adjoining LAW SCHOOL. They will be received by the Regius Professor of Law, the Professor of International Law, and the Reader in English Law.

On leaving the Law School THEIR MAJESTIES will proceed across the court to the new BOTANICAL LABORATORY, where they will be received by the Professor of Botany and the Reader in Botany, and conducted over part of the building.

From the Botanical Laboratory THEIR MAJESTIES will proceed to the SEDGWICK MUSEUM. At the southern staircase they will be received by the Professor of Geology and the University Lecturer in Geology, who

will conduct them into the principal Museum, where the KING will unveil the Statue of Professor Sedgwick.

At 4 p.m. THEIR MAJESTIES will leave the Museum and proceed by way of St Andrew's Street and Regent Street to the Railway Station.

A STATEMENT

READ BY THE VICE-CHANCELLOR IN THE SENATE HOUSE.

IN obedience to His Grace the Chancellor I lay before Your Majesties a statement as to the new Buildings which You have graciously consented to visit this day. The statement must be brief. If it is but a prosaic record of what we have planned and of what we have accomplished, I crave Your Majesties' kind indulgence.

And first I beg leave to remind Your Majesties that these new Buildings are but the continuation of a policy on which the University entered long ago, and which is still far from being consummated. The School of Science among us has itself been of a slow and gradual growth; and it must not be forgotten that the University, while meeting to the best of its power the claims of Science, has endeavoured to make due provision for those literary studies which have ever been dear to it.

So long ago as 1786, Lecture Rooms for Science were built in the corner of the old Physic Garden; and to these in 1832 was added a Museum of Human Anatomy. When in 1852 the Botanic Garden was

removed to its present position in Trumpington Road, the erection of Museums and Lecture Rooms for Science was already contemplated, though it was not till 1866 that the Buildings were ready for use.

In the last three decades of the 19th century great advance was made in the Buildings of the University.

In 1874 the Laboratory devoted to the study of Experimental Physics was opened. It is a monument alike of the munificent generosity of our late Chancellor and of the keen interest in the advancement of Science which he manifested throughout his long life. In his honour it is called "The Cavendish Laboratory."

In 1879 the Divinity School, for which we are chiefly indebted to the benefaction of the late Dr Selwyn, Lady Margaret's Professor of Divinity, and the Literary Lecture Rooms, were finished.

In 1883 the Museum of Archaeology, in 1888 the Chemical Laboratory, and in 1891 the Laboratories of Human Anatomy and of Physiology were built, the cost in each case being defrayed out of the Common University Fund.

In 1894, through the munificence of our Chancellor and of other donors, the Engineering Laboratory was erected; and to this in 1900 a notable addition was made through the noble gift of the family of the late Dr John Hopkinson of Trinity College.

From these Buildings, whose history now belongs to the past, I turn to those which, in the gracious Presence of Your Majesties, we inaugurate to-day.

in the Senate House

The study of Law among us is probably coeval with the University. With it are connected some of our oldest architectural remains. In recent times, however, though the Professorial staff has been increased, yet Law, having been dispossessed of its ancient School, has been without a settled home. In March 1899 a Syndicate was appointed to consider what steps could be taken to provide a remedy. But the whole question assumed a new shape when in 1902 the Trustees under the Will of the late Miss Rebecca Flower Squire gave to the University a share, amounting to £15,000, in the munificent bequest of that lady, on condition that the money was used for the erection of a Law Library to be called "The Squire Law Library." The Lecture and Examination Rooms have been built out of the Benefaction Fund of the University, which came into existence in 1897. The whole Building forms a School worthy of this ancient Faculty; and here successive generations of our students will, we trust, learn to realise the high position of Law in the life of the nation: "Justitia elevat gentem."

From Law I turn to Medicine. The need of adequate Buildings had long been felt, if the Science of Medicine in all its many branches was to be cultivated in a manner worthy of its ancient place in this University. A Syndicate was appointed in March 1899 to consider what could be done. As the work has gone forward, no pains have been spared to bring every detail up to the high standard which modern Science demands.

A Statement read by the Vice-Chancellor

The new Buildings provide permanent accommodation for the Departments of Medicine, Midwifery, Surgery, and Pharmacology, and a home—a temporary home, as we hope—for the Departments of Public Health, Medical Jurisprudence, and Pathology. The establishment in the University within the last few weeks of a School of Tropical Medicine emphasizes the need of extension in the near future.

Within this Building we shall ask Your Majesties this afternoon to visit the Museum which commemorates, and bears the name of, our first Professor of Surgery, Sir George Murray Humphry. To him our Medical School owes a great debt, which was accumulating during his many years of strenuous service.

The cost of the part of the Building already taken in hand is upwards of £34,000; it has been defrayed out of the Benefaction Fund and by the special gifts of many Benefactors, who have had at heart the development at Cambridge of the Medical School.

In an important Report dated February 21, 1899, the Museums and Lecture Rooms Syndicate drew the attention of the University to the urgent need for increased accommodation for the department of Botany. A Syndicate was accordingly appointed; and two years later the present Building was begun. It contains Lecture Rooms, Laboratories for teaching and for research, a Museum, and a Herbarium, the storehouse of collections given to the University by successive occupants of the Chair of Botany, since its foundation in 1724, and by various travellers, among whom

the honoured name of Charles Darwin is conspicuous.

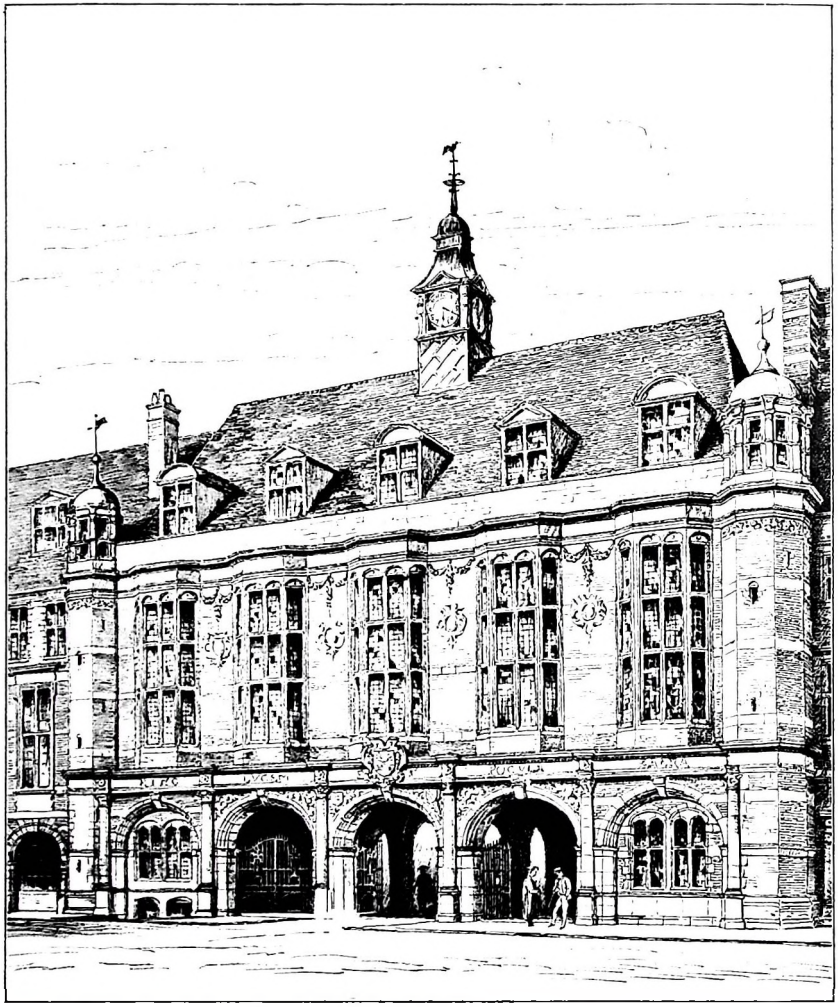
The sum spent on the Building and on the fittings has been upwards of £25,000, a sum which has been almost wholly provided by the Benefaction Fund.

In January 1873 Adam Sedgwick, who since 1818 had occupied the Woodwardian Chair of Geology, passed away. Shortly afterwards at a memorable meeting, held in the Senate House, it was agreed that the one fitting memorial of his unique personality and of his work in the field of science was a Geological Museum, which should make his name familiar to generations of Cambridge men in the time to come. This decision evoked a generous response. We remember, Sir, with gratitude that to this memorial Your Majesty was pleased to be a contributor. To-day we see the completion of this design. When You, Sir, unveil the statue of Sedgwick, as he stands hammer in hand and ready for work, the plannings of many years will be realised.

This is an occasion on which thankfulness for what we have been enabled to accomplish is necessarily blended with the thought of what we hope to do in the future. It is the dream of some among us that the archaeological collections, which already contain the amplest material for the student of antiquities and for the student of ethnology, will some day find a spacious resting place in a Building which shall com-

plete the Quadrangle of the Court, to which we shall presently conduct Your Majesties. It is the dream of others that near the Schools of Geology and of Botany they may be allowed to see an Agricultural Laboratory, devoted to that Department of Scientific research which has so close a relation to the prosperity and happiness of this Country. May such dreamers find that their dreams have come to them through the fabled gate of horn.

The visit of Your Majesties to the University will make this day ever memorable in our history. We humbly desire to prove ourselves not unworthy of your Royal favour. The Buildings of which I have spoken, and which, as we trust, your Majesties will approve, are designed to be the homes of great and noble Sciences. They represent our ambition to learn and to teach as befits those to whom a supreme work has been committed, and who have received from an immemorial past an inheritance of noble traditions and of high examples.



The Squire Law Library

(*Reproduced from* The Builder, 12 *May*, 1900)

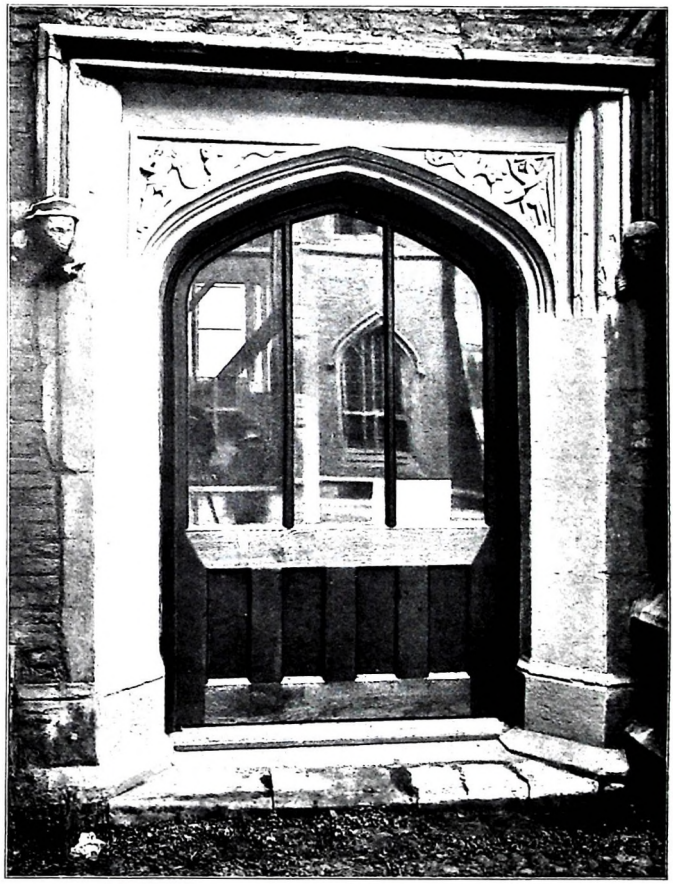
THE LAW SCHOOL AND SQUIRE LAW LIBRARY.

FOR five, it may be for six, hundred years the public teaching of Law in the University of Cambridge was carried on in what is still called the Schools' Quadrangle. In its south-eastern quarter were the original "Schools of Law" (probably Civil *and* Canon), already styled ancient in an extant lease of 1459. Here the School of Civil Law remained when a new School of Canon Law had been built on the west side of the Quadrangle. Here a new School of Civil Law, with a School of Philosophy adjoining on the west, and a Library above both, was begun in 1458, and finished about 1470. From a curious plan attached to the above mentioned lease (figured in Willis and Clark's *Architectural History*, Vol. III., p. 5), we can determine, almost with certainty, the place where the "Chair of Civil Law" stood, in the old time before that—the Chair which the presiding Doctor or Master occupied in the original "Exercises" for Law Degrees. Traces of its probable position were actually found, four hundred years later, when

the "New School" of 1470 was finally absorbed into the University Library of to-day. And on the doorway, now closed, of that same School, a photograph of which I reproduce, may still be seen two corbels, battered and decayed, but obviously representing the "Keeping of an Act," or the conferring of a degree. The Master or Doctor, on the dexter side, passes over the *rod*, which has been received by the Scholar on the sinister. This, at least, is my interpretation: and, if I am right, these figures, backed by a certain amount (slight, I admit) of tradition, may furnish a more satisfactory explanation of the difficult word Bachelor, than that usually accepted, from the smaller holdings of Chivalry.

In the Doctor's head-dress, at any rate, may be traced what is probably the first appearance of that picturesque secular hat which is worn by our Doctors of Law and Medicine at the present day. This, with other quaint records of costume remain, and doubtless will remain, memorials of the medieval time; but, except for these externals, the old order is changed indeed.

Canon Law, as a distinct academical study, is a thing of the past, since the Injunction of Henry the Eighth in 1535. To Civil Law on the other hand was assigned five years later one of the five Readerships established by the same king. His intention may to some extent have been, as has been suggested by Professor Maitland, to favour its study and principles as against those of English Common Law.



Doorway of Law School, built 1457—1470

But the study, whether in spite or in consequence of this special treatment, did not as a matter of history thrive much in England at large, and was in a somewhat languishing condition at Cambridge, when fresh life was given to it, at the beginning of last century, by the reforms of Dr Geldart, including the addition of examination to the formal University requirements for a Law degree. In the course of the same century the more obviously useful subjects of English and International Law have been added, as part of the recognised course of study for University degrees, to that of Civil; though the latter is still "read" by its Regius Professor, and will, it is to be hoped, always retain its position as part of the liberal education desirable for a high class lawyer.

Under the presidence of the same Professor, one or two candidates, who happened to be resident abroad, have still their right reserved to "Keep an Act," *more majorum.* After them, the old "Exercises" will have been entirely replaced, as qualifications for Law degree, by examination and written dissertations. The oral instruction of former times has been, I need scarcely say, greatly improved and extended, by the addition of a Downing Professor of the Laws of England, a Whewell Professor of International Law, a Reader in English Law, and a number of able College lecturers. It may perhaps be held that even greater service has been rendered, by the present distinguished occupants of the two Chairs above named, in their literary contributions to their respec-

tive subjects. Nor can the fact be ignored that, with the rapid increase of good modern text-books, a considerable modification, even of the present teaching system, may probably be required in the near future; when individual study, under proper direction and supervision, and with all sufficient appliances, will to a great extent take the place of the Lecture, more suited for the times of a scantier book supply.

I have here endeavoured to indicate one of the most pressing needs that was felt by the teachers of Law in the Cambridge of late years—that of a good consulting Library, with time and convenience for study; more than could be afforded by the room in the University Library, into which I myself endeavoured, with the kind help of the official staff, to collect the more generally used Law books, a few years ago.

With this need was coupled the great desirability of some concentration, in connexion with the Law Library, of the teaching power locally scattered through Cambridge—a state of things involving much waste of time to students and considerable inconvenience to teachers. The old School of Civil Law—the *new* School of 1470—has now for some years been absorbed, by a natural process of which the Professor cannot reasonably complain, in the University Library: he himself, after a temporary sojourn in the former home of the Canonists—lately known as the Arts' School—has been a wanderer through the Literary lecture rooms.

Efforts had been for some time made to supply the above deficiencies; ultimately, after several futile attempts to secure a more central site, the Legal Faculty were, on the whole, agreed upon the land purchased from Downing College, as the best available position for a School and Library. The first suggestions were of a very modest character, being kept down from regard to the condition of the University finances. Still, a considerable amount of individual liberality was shewn, in answer to appeals for this and other University needs; and finally the particular difficulty of Law was solved, in a manner far exceeding the most sanguine expectations of the Cambridge legal faculty, by the munificent bequest of Miss Rebecca Flower Squire.

Under the will of this lady, proved 30 Dec. 1898, an amount of some £60,000 was, subject to duties, legacies, and annuities, left for the purpose of founding and endowing at the Universities of Oxford and Cambridge Exhibitions, Scholarships and Professorships for Law and Divinity, and of Law Library and Librarian, and the erection of building for Law Library, and the purchase of furniture and books therefor, or some of such objects.

A Scheme for the carrying out of the Trusts of Miss Squire's will was framed by the Trustees and Executors, Mr Edward Chester and Mr James Flower, and was approved by Orders of the High Court of Justice. The proposals of the Trustees contained in this scheme were gratefully accepted by the University;

a sum of £15,000 was set apart by them for the erection at the University of the Squire Law Library, and for fittings and fixtures therefor as declared in a deed of Trust dated 20 February, 1902; and a sum of £7500 Consols was in August 1902 transferred by them to the University for the foundation and endowment of Squire Scholarships in Law, as declared in a deed of Trust dated 8 August, 1902; to which a further sum of £5000 Consols has recently been added by them for the purpose last named.

The University being thus relieved, by Miss Squire's bequest, from the expense of providing a Law Library, was enabled to meet the remaining requirements of the Faculty, in the way of Professors', Lecture and Examination rooms. These were to form the Law School, which was to be so arranged as to be kept obviously distinct from the Squire Library, but to be approached by a staircase bay belonging to the latter and erected out of the Squire fund.

The design furnished by the architect, Mr T. G. Jackson, R.A., has been generally regarded as eminently successful. The Library, which comes next to the Geological Museum, the work of the same architect, forms with its three supporting archways, an imposing centre to the range of buildings ultimately to occupy the Downing Street front of the new Quadrangle; and furnishes a spacious entrance to the Quadrangle as a whole.

The main repository for books will be a lofty room of 85 by 30 feet, with cases projecting between the

windows, and galleries at each end. An upper storey, with a height, in the central part, of 14½ ft., will serve for duplicates, and perhaps occasionally for examination purposes. The circumstances of Miss Squire's bequest are recorded on the entrance by the following inscription, running on the two sides of the well-known emblem of Alma Mater: *Ex dono Rebeccae Flower Squire exstructa est haec Bibliotheca Anno Dom.* MDCCCCIII *in usum Academiae et juris studiosorum.*

The School buildings extend beyond the Library towards Pembroke College, the destination of both Library and School being indicated, on the Downing Street front, by a tablet bearing the Arms granted to "the Lawe Reader" in 1590. The following are the words, in their quaint spelling, of "Rob^{t} Cooke alias Clarencieulx, Roy d'armes." "The field purple a crosse molen gold on a chiffe gules a lyon passant gardant gold marked in his syde with this letter L sables and to the Creast upon the Healme on a wreathe purple & gold a bee volant gold manteled gules doubled silver." The sculptured crest is intended to depict the *Queen*, as Head of

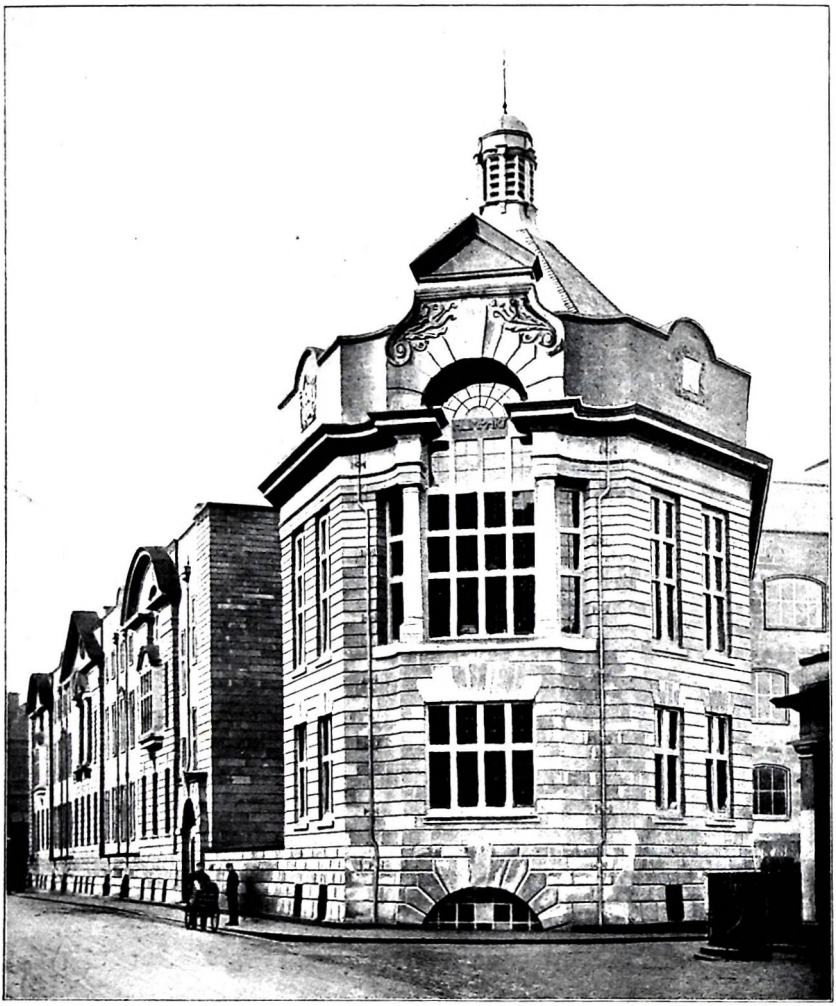
> "the honey-bees,
> Creatures that by a rule in Nature teach
> The act of order to a peopled Kingdom."

In the inner front a common access to the Library and School is given by a doorway in the staircase bay above mentioned. High above is a noble figure of Justice, the work of Mr Pegram, lately elected A.R.A., which is surmounted by the Vulgate version of

Proverbs xiv. 34—*Justitia elevat gentem*—while directly over the entrance are to be read the words *Discite justitiam moniti*, from the 6th book of the Aeneid.

It is somewhat premature to go into the question of internal fittings, assignment of rooms in the School, or arrangement of the Library. Generally, the latter will be divided into bays, each corresponding, as far as may be, to a division of subject matter, each furnished with its working table, and lighting provision for a certain amount of evening work during the darker months of the year. It is confidently hoped that the supply of accommodation and appliances, such as certainly have never been enjoyed before by Cambridge Law Students, may lead to a greater interest in the Study, to the wider attainment of a high standard, and so perhaps to something more than the small amount of recognition at present granted to our Academical Education, as an avenue to practice in the Law.

E. C. CLARK.



Medical School: Humphry Museum and south front

THE MEDICAL SCHOOL.

THE portion of the new Medical School Buildings now opened provides permanent accommodation for the Departments of Medicine, Midwifery, Surgery, and Pharmacology, and partial and temporary accommodation for the Departments of Public Health, Medical Jurisprudence, and Pathology.

The building covers part of a site of an irregular L shape. Only one limb of the L, that facing Downing Street, and the Museum at the angle, with part of the other limb, are completed.

Classic forms have been used to ornament the Downing Street front and the Humphry Museum; both of which are faced with Ancaster stone, with external weatherings of Derbyshire sandstone.

The whole building is well lighted and contains excellent class-rooms and laboratories. The arrangement will be understood from the plans of each floor here reproduced.

On the basement floor are workshops, store rooms, combustion and other experimental rooms,

photographic rooms and accommodation for the engines, and the electric lighting and ventilating installations.

The entrance from Downing Street and the main staircase are lined with Hoptonwood stone and paved with black and white marble. Grouped near, on the ground floor, are the large lecture room (lighted entirely by artificial light) to accommodate 200, a Pathological Museum, and a couple of work-rooms, one for the Pathological Department, and the other for Public Health work. Turning to the left we come to work-rooms, and a large Demonstration and Examination room in the Medical and Surgical Departments; further west are Pharmacological laboratories, and private work-rooms.

Ascending the staircase to the first-floor we have on the right the Humphry Museum—62 ft. long by 38 ft. broad—which has been treated with some elaboration of stonework; the dome is carried by marble columns, and the walls are lined with glazed tiles, the work of Mr Conrad Dressler. Opening from the same landing is the Library, which may also serve as an Examination Room. It is planned on a new principle; the bookcases are blocked in stacks on either side of the room, each separate case being moveable, so that it can be pulled forward to give access to the shelves. By this arrangement the accommodation for books is nearly trebled. The Library is lighted from the roof, and occupies two storeys, as does the large Lecture Theatre below it. On each

side of the Library is a room for Pathological work. On the same floor, to the left of the main staircase, are the private room of the Regius Professor of Physic, and a research work-room for his students. On the other side of the passage are an operating room and a private room for the Professor of Surgery. This room communicates with a well-lighted and convenient class room seated for about 60 students. Behind the lecturer's desk is a small preparation room. Further west are admirably fitted class rooms for elementary and advanced Pharmacological work, and retiring and work-rooms for the Professor of Pharmacology and his Assistant.

To the right of the main staircase on the second-floor is a somewhat smaller Museum, to be used primarily for teaching purposes, in which the student will have full access to all the specimens. Leading from this Museum is a small room, at present fitted up as a Laboratory for Pathological Chemistry, and above this, lighted from the east by a roof light, is an excellent photographic room. Turning to the left from the central staircase is a series of rooms lighted from the roof, one for the Museum Assistant, a private research room, a larger room for Experimental Pathology, and opposite this a room, for the present, devoted to Hygiene. Continuing to the west are a work-room and private room for the Demonstrator of Special Pathology, two preparation rooms, and then a large Practical Class room for Morbid Histology (lighted from the north by side windows and weaving-

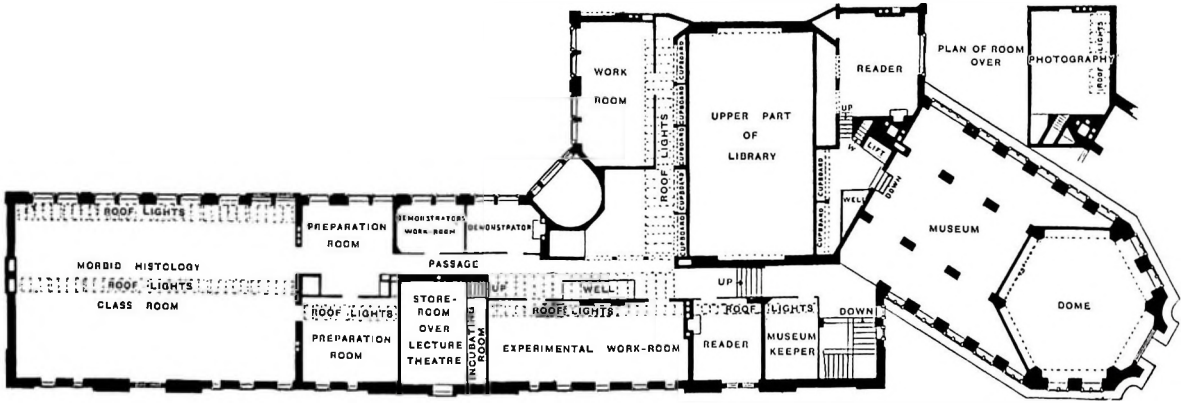
shed roof-lights) in which can be accommodated about 90 men. Above the Preparation Rooms is a large store-room and a good Incubating room.

In all the research rooms and practical class rooms hot and cold water, gas, and electric light have been laid on to the tables, and arrangements have been made for the reception of pressure and exhaust pipes. The fittings in all the rooms are simple and inexpensive, but strong and well suited for the purpose for which they are designed.

Concrete floors have been used throughout, the paving being of wood block and granolithic cement, with glazed surface channels to take the waste immediately outside. All the supply pipes and electric wires are carried in covered chases and can be reached without breaking the walls or floors. The walls and ceilings are finished smooth in adamant cement, all angles are rounded, the skirtings and cornices plain hollows. The doors and furniture are made plain and flat, with no mouldings or projections to carry dust. The window sashes of cast-iron are so divided as to give proper light for microscope work, except in the smaller lecture theatres and Museum, where a new form of lead glazing has been used.

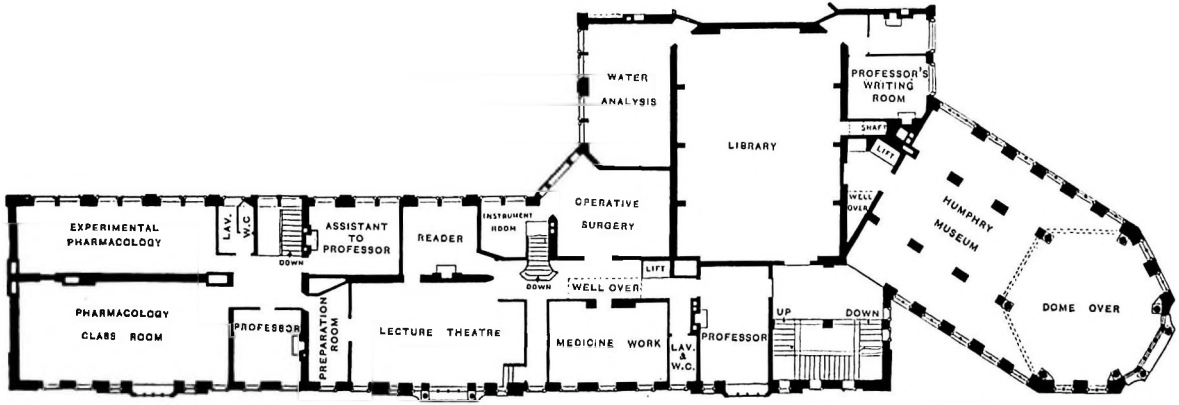
The heating and ventilation are carried on interdependently on the Plenum System by means of two Sturtevant steam heaters, two fans driven by electric motors, a special air filter, and a system of ducts and flues built in the walls, through which the air is forced into the various rooms in all parts of the building.

CAMBRIDGE MEDICAL SCHOOL



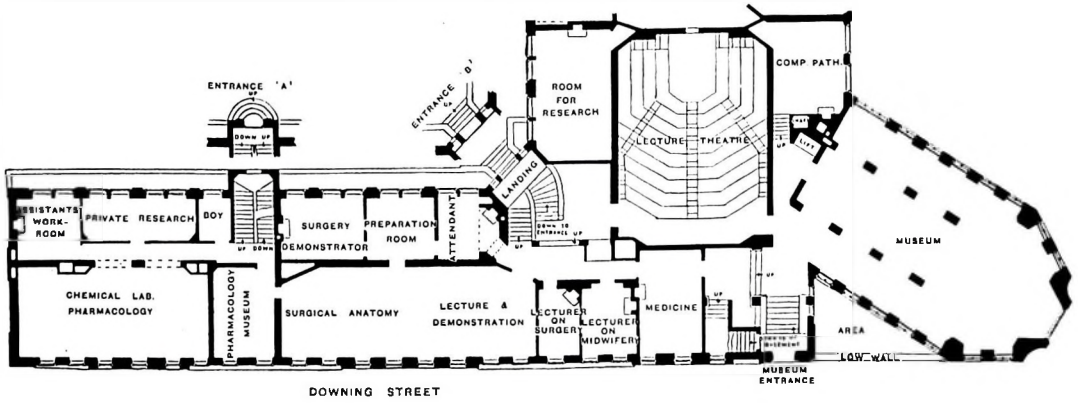
Second Floor Plan

CAMBRIDGE MEDICAL SCHOOL



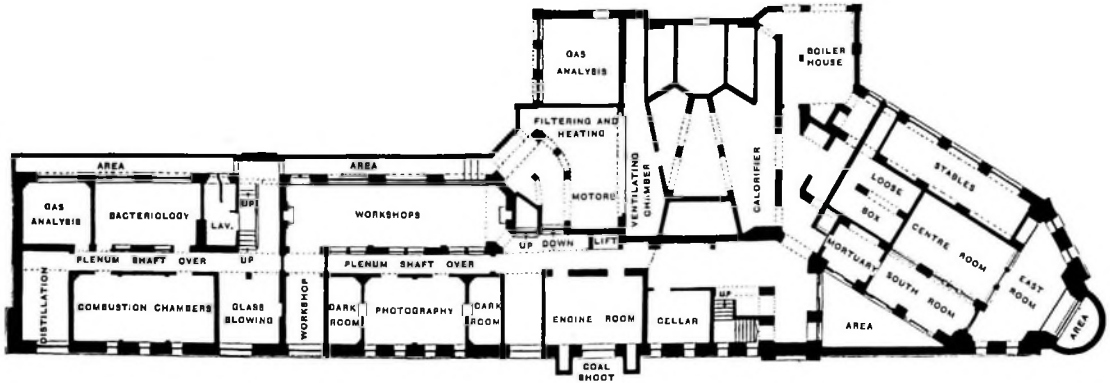
First Floor Plan

CAMBRIDGE MEDICAL SCHOOL



Ground Floor Plan

CAMBRIDGE MEDICAL SCHOOL



Basement Plan

Electricity for light and power is developed by means of two 20 h.-p. Diesel oil-engines coupled to two Morley dynamos; reserve current is stored in a battery of accumulators, the whole plant being devised to obviate stoppage in case of injury to any single piece of mechanism. Either of the fans is capable of doing at least 75 % of the ventilation and warming of the whole building, and the accumulators would provide electric current in case of a stoppage of either of the generating sets.

The building has been designed by E. S. Prior, M.A. (Gonville and Caius College), and the work has been carried out by Messrs Kerridge and Shaw; Mr Wray, of the Sturtevant Engineering Co., has supervised the engineering work.

The part of the building not yet begun but urgently needed, is designed to afford additional accommodation for Pathology and Physiological Chemistry, and Hygiene will be housed here until funds are forthcoming to build an Institute of Hygiene, one of the next important requirements of the University.

The illustration shews the Humphry Museum, with the south front of the building described above. I also give a plan of each floor.

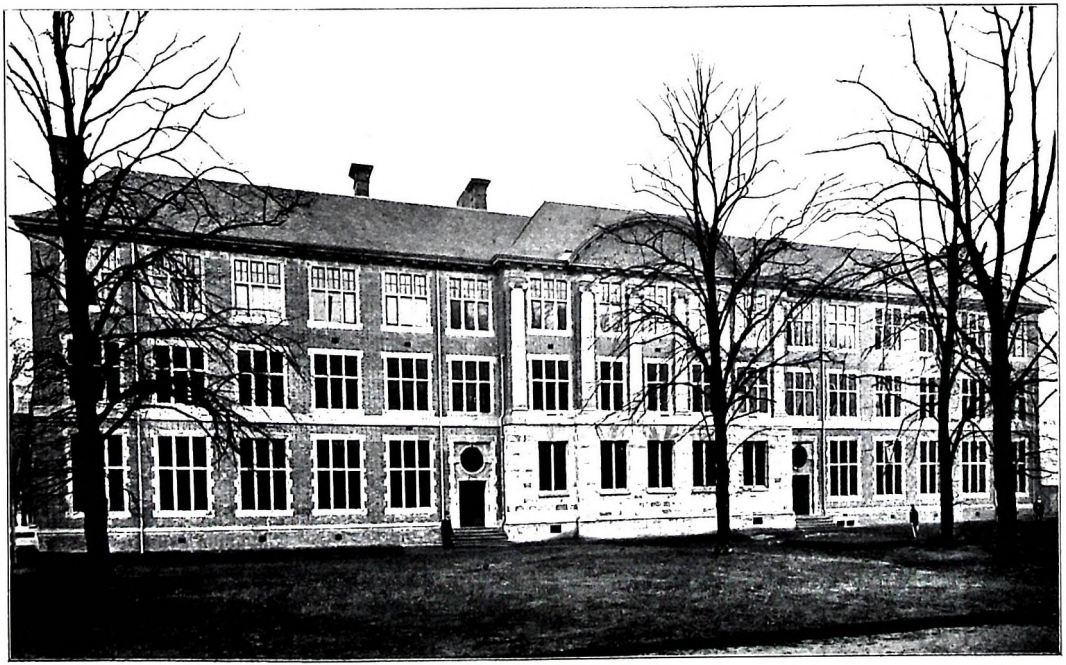
G. SIMS WOODHEAD.

THE BOTANICAL SCHOOL.

THE new building for the above School was designed by Mr W. C. Marshall of Messrs Marshall and Vickers, to meet the requirements put forward by the Professor of Botany about three years ago. It was built by Mr Sindall of Cambridge.

The building is a simple and comparatively plain structure, depending essentially on its proportions and materials for its excellent effect. Without aiming at close imitation of old work, it may be said to be reminiscent of the Renaissance Architecture of the end of the 17th century.

It may be described as an oblong block, approximately 200 ft. long by 40 ft. wide, extending east and west on the south side of a large quadrangle, the north side of which is occupied by the Law School and the Sedgwick Museum. It is constructed of reddish-brown bricks, with facings and mullioned windows of Clipstone stone.



Botanical School, north front

The north, or principal façade, has a central pilastered projection, built of stone up to the first-floor and surmounted by a plain pediment; and on either side of this are the entrances and staircases. This central feature faces the principal entrance to the quadrangle from Downing Street. In the nature of the material and in the main horizontal lines the building harmonises with the other buildings in the quadrangle. The architect considered that the very large amount of light required could best be obtained by the use of mullioned windows; these are made with wide lights, and in the laboratories are glazed below the transoms with single sheets of plate-glass.

The building comprises a basement and three floors, with a mezzanine between the first and second floors. There is also a flat roof, skilfully constructed, so as to be available for experimental purposes.

Basement.

The central part of the basement is occupied by the lower part of the large Lecture Room, adjacent to which are preparation rooms and store-rooms. It also includes an attendant's office, coal-cellars, and a boiler-room. The heating apparatus, constructed by Messrs Mackenzie and Moncur, comprises two Cornish boilers, with low pressure hot-water pipes supplying radiators in the rooms and corridors, with an independent supply to the Greenhouses. The electric

lighting has been carried out by Messrs Baily, Grundy, and Barrett, under the instructions of Messrs Owen Lucas and Pyke. A lift, for conveying materials and apparatus, runs from basement to top.

Ground Floor.

The Large Lecture Room, which measures 52 ft. by 35 ft., is designed to accommodate about 200 students; the number at present attending the Professor's lectures is 131.

The Herbarium, an oblong room measuring 45 ft. by 39 ft. 6 in., is lighted by windows on the north and south. It contains the extensive and valuable collections contributed by a succession of former professors since the foundation of the Chair of Botany in 1724, and by various travellers, or purchased from time to time, including those of Lindley, Henslow, and Babington, Gray's *Algæ*, a series of Lichens, Fruits and Seeds collected by Sir C. Bunbury, certain interesting plants brought by Charles Darwin from the Galapagos Islands and elsewhere, as well as additions made from time to time by others, among which may be mentioned the collection formed in the Pyrenees by Mr C. Packe, the *Rubi* of M. Genevier, etc., etc. Here also are a room for the Assistant Curator, a library of monographs and books on Systematic Botany, and accommodation for those who wish to engage in research on the collections.

The Museum, a beautiful, oblong room on the east of the Lecture Room, is of the same size as the Herbarium, but well lighted on three sides by tall windows.

It is fitted with plain, but well-finished mahogany cases, with glass shelving and dead-black backing. It is now possible, for the first time, to display adequately the valuable and interesting collections. Most of these cases are open, to facilitate the examination of the objects; but a few are provided with dust-tight glass doors for the more fragile specimens. A room for mounting and preparing specimens, and a bay to the north for specialists engaged in research, are also provided.

The extensive collections, obtained from various parts of the world, exhibited in the Museum, comprise a series of specimens specially designed to display the chief biological and systematic features of all the great classes of the Vegetable Kingdom. For many of the specimens we are indebted to donors at home and abroad. The *Fungi* are represented by a comprehensive series carefully chosen, with the object of illustrating both the general biology of the plants, and the part they play as parasites in causing diseases and galls in plants and animals. Among the specimens illustrating the biology and morphology of the Vascular Cryptogams there are several exhibits deserving special attention. There is also a valuable collection made by the late Professor Henslow, of woods, grafts, excrescences, and normal and

abnormal growths on Forest-trees, etc. The Museum also contains representative collections of Gymnosperms and Flowering plants, with a number of *Algæ*, Mosses, and Lichens. The Museum also possesses a remarkable section of the trunk of the Mammoth Tree of California, showing over 1300 annual rings. Among other striking specimens may be mentioned an example of the "Vegetable Sheep" of New Zealand (*Raoulia*), giant Bamboos, inflorescences of Palms, etc.

First-Floor.

The first-floor may also be regarded as divided into three portions.

The centre, on the south side, is occupied by the Library, containing considerably over 4000 volumes and pamphlets on all branches of Botany, properly catalogued and arranged on open shelves, and in glazed cases. The fact that 37 botanical scientific serial publications are taken in, shows that thorough provision is made for all branches of botanical study and research.

Opposite the Library, to the north, are the private working rooms of the two lecturers in Botany, Mr Seward and Mr Blackman.

The west end is occupied by two Laboratories. To the north the Morphological Laboratory for the practical study of the Advanced Morphology and Anatomy of Plants; to the south the Chemical

Laboratory fitted for experimental study and research in the Chemistry of Plants. In the latter is also a Photographic dark room.

The rest of this end of the building is occupied by a room for research, to the north, and on the south a work-room, where carpenter's repairs, glass-blowing, etc., can be carried on.

The east end is occupied by the Professor's Private Room, and rooms for Incubators, Sterilizers, preparation and stores on the south; and by the Professor's Laboratory and two rooms for Research on the north, while a small Greenhouse at the extreme east affords accommodation for experimental work on Plant diseases and similar problems.

Second-Floor.

The western half of this floor is occupied by the large Laboratory for the practical study of General Botany by students attending the Professor's Lectures. This is a large room nearly 100 feet long by about 40 feet wide at the broadest end, and has bench and seating accommodation for about 150. There are at the present time over 100 students working in this laboratory. The facilities offered by the Botanic Garden for the study of fresh specimens ensure adequate supplies of material, and the Curator of the Garden, Mr Lynch, renders valuable assistance in the cultivation of the plants required for teaching pur-

poses. The two University Demonstrators, Mr Hill and Mr Gregory, have private work-rooms opening into the Laboratory. Adjoining the large Laboratory is a small Lecture Room for Advanced Lectures, and next to this is a store-room for Laboratory material.

The east end of the second-floor is occupied by the Laboratory for Plant Physiology, a nearly square room measuring about 45 ft. by 40 ft., lighted from three sides, and very fully equipped with apparatus for the experimental study of the Physiology of Plants. It contains a Dark Room, and has a door to the west leading to a Greenhouse, which is so sunk in the building that it is not exposed to the heating effects of direct insolation at any time of the year.

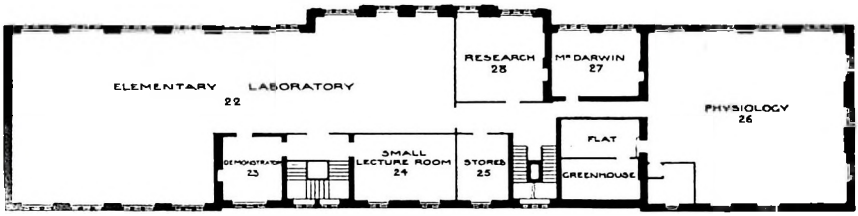
The private room of the Reader in Botany, Mr Francis Darwin, and a room for Research, occupy the north side, between the two laboratories just mentioned.

The illustrations shew the plan of each of the three floors, the north side of the building, and the interior of the student's laboratory.

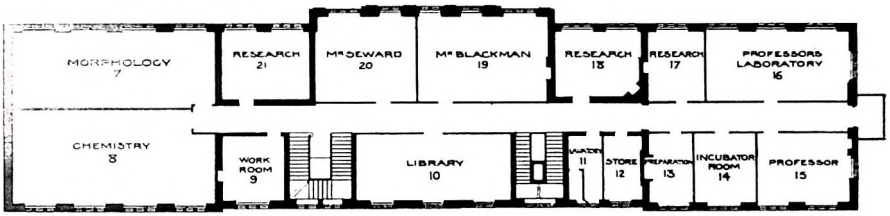
The Roof.

The large flat roof is fitted with conveniences for experimental work. There is also a well-lighted Greenhouse. The flat area is surrounded by gables on three sides so as not to interfere with the architectural effect from the Quadrangle.

BOTANICAL SCHOOL

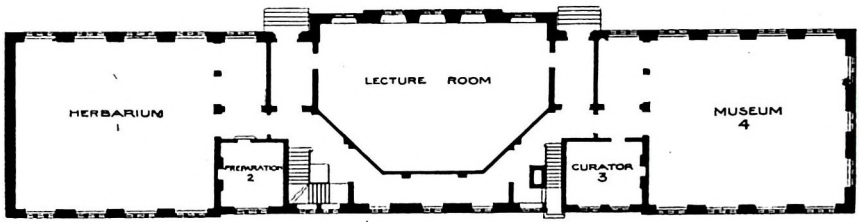


SECOND FLOOR PLAN

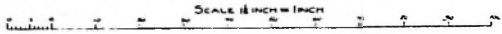


FIRST FLOOR PLAN

MEZZANINE PLAN



GROUND FLOOR PLAN



Botanical School: Students' Laboratory

The Botanical School

Course of Instruction.

The Courses of Botany which are at present given are as follows:

The General Course of Botany, with laboratory work, given by the Professor during each of the three terms, comprises an introduction to the study of the Organography, Morphology and Anatomy, and Physiology of Plants, in the Michaelmas Term; an Evolutionary Course on the Biology and Classification of the Fungi, Algæ, Bryophyta, Vascular Cryptogams and Conifers, in the Lent Term; and a course on the Systematic Botany of the Flowering Plants during the Easter Term.

This course is supplemented by visits to the Botanic Garden, and by excursions into the surrounding country during the Long Vacation, for the study of the Flora of the district.

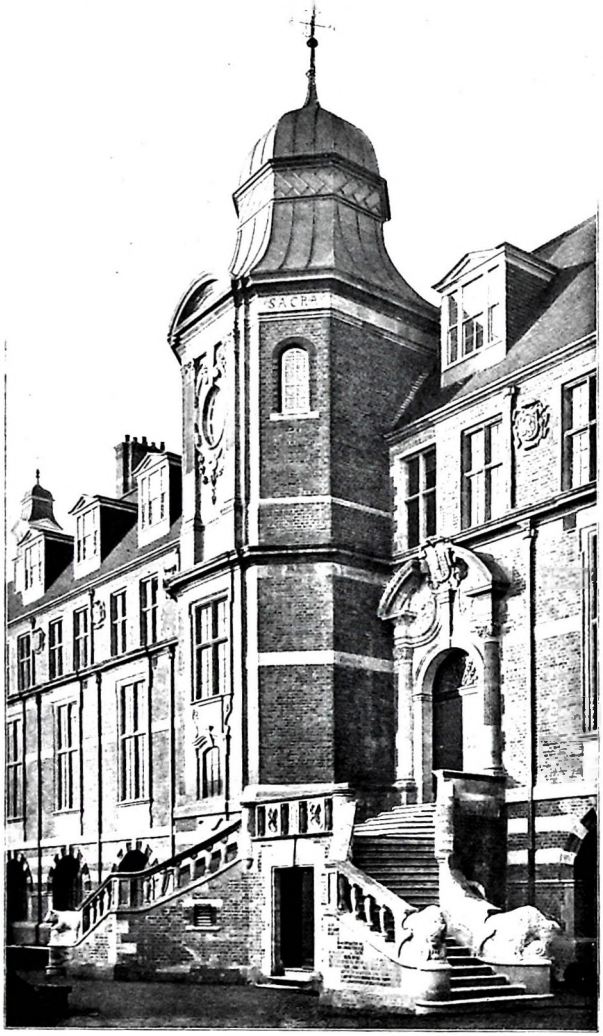
The advanced teaching comprises Courses on the Experimental Physiology of Plants, given by the Reader in Botany, and on the Morphology and Phylogeny of the Algæ and Bryophyta, and the Pteridophyta and Gymnosperms, given by the two Lecturers in Botany, as well as a Course on Palaeobotany.

The Professor holds an Advanced Course on Fungi, and during the Easter Term there is a Laboratory course on Systematic Botany, supplementary to the general course, given by the Assistant

Curator of the Herbarium, under the supervision of the Professor.

There are also Courses on Agricultural Botany and the diseases of Plants given by the Botanist to the Agricultural Department; and one on Elementary Biology, given in conjunction with the Zoological Department, by one of the University Lecturers in Botany, intended as an introduction to Biological Science.

H. MARSHALL WARD.



Sedgwick Museum: entrance from the Court

THE SEDGWICK MUSEUM.

THE study of Geology in the University of Cambridge originated with the bequest of the eccentric physician Dr John Woodward, who by Will dated 1 October, 1727, directed his executors to convert into money his personal estate and effects, to purchase land of the yearly value of one hundred and fifty pounds, and to convey the same to the University of Cambridge. Out of this rent a yearly salary of one hundred pounds is to be paid to a lecturer, who is to "read at least four lectures every year," and to defend therein the doctrines promulgated by the founder in his *Natural History of the Earth*, and other works. In the next place he bequeathed to the University his collections of English fossils, with the two cabinets containing them, and their catalogues. The executors are to "cause and preserve the same to be lodged and reposited in such proper room or apartment as shall be allotted by the said University;" the lecturer is to

have charge of them and their catalogues; and he is to attend daily "in the room where they are reposited from the hour of nine of the clock in the morning to eleven, and again from the hour of two in the afternoon till four three days in every week to show the said Fossils, gratis, to all such curious and intelligent persons as shall desire a view of them for their information and instruction." To these cabinets two others, containing foreign fossils, were presently added by purchase, for the sum of one thousand pounds; and in 1734 a small room was contrived for their accommodation—now the Novel-Room of the University Library—by cutting off a space about fifteen feet in length from the north end of the Arts School. So long as the collection could be contained in Woodward's cabinets this room was not ill-adapted to its purpose, but when new acquisitions had to be displayed, it was found to be wholly inadequate. Many abortive attempts to replace it by something better were made; but none of them were accepted, and there the Geological collections of the University remained for at least one hundred and seven years.

The first lecturer was appointed, as Dr Woodward had directed, in 1731, and between that date and 1818, when Adam Sedgwick was elected, six gentlemen occupied the chair. They did not do much to advance the knowledge of Geology; it is in fact doubtful whether any of them ever lectured; and it has been whispered that one, who went so far as to publish a *Plan of a Course of Lectures on Mineralogy*, received

an intimation from high quarters which caused him to be silent for the rest of his tenure of office.

In 1818, as stated above, Sedgwick was appointed. He is said to have known nothing whatever of geology before he was selected to teach it; but, if this improbable legend be true, he rapidly supplied his want of previous education, by unwearied application, both in the study and in the field. His intellectual force, his varied attainments, and his most attractive personality soon made themselves felt, and before long his lecture-room was crowded with eager listeners, while his demonstrations of geology out of doors, when he conducted a large party of horsemen across country, were some of the most popular engagements of the term.

It does not always happen that a first-rate lecturer is an equally good collector; but Sedgwick never forgot the importance of a large series of specimens, carefully selected and well displayed in a good Museum. To acquire these he used not merely his scientific knowledge, but his social influence; and, whether it was a question of donation or purchase, he pleaded so irresistibly that a specimen was surrendered, or a subscription paid with almost incredible swiftness. His endeavours were rewarded by the accumulation of a vast collection, which filled not merely the Woodwardian apartment, but turned his own College rooms into a store-house.

In 1837 the first stone was laid of a new Library, with museums and lecture-rooms beneath it. The

funds were raised, in part at least, by subscription, and Sedgwick, though by no means a rich man, contributed one hundred guineas. Moreover, he was active in soliciting subscriptions from others. The north side only of the intended quadrangle was built; but the ground-floor and the basement of the part constructed were large enough to enable Sedgwick to display his collections; and, with the help of the most skilful scientific experts in each department, he soon made the whole available for educational purposes. This removal took place in 1841; and for a time, by judicious annexation of some neighbouring territories, the Museum was large enough for its contents; but gradually, as purchase after purchase was made, at Sedgwick's suggestion, and gift after gift received through his influence, the need for enlarged quarters became as manifest as it had been in 1837. But the poverty of the University, not its will, stood in the way, and no change was possible.

In January, 1873, at the ripe age of eighty-eight, Sedgwick passed away; and what he could not effect in life, was brought to pass, slowly but surely, by his death. Two months later, a great meeting of his friends was held in the Senate House; and speaker after speaker, dealing with the subject from different points of view, agreed in one thing, namely, that the one suitable memorial to Sedgwick would be a new Geological Museum, to bear his name for ever, as the Professorship bears that of Woodward. It is much to be regretted that the speeches delivered on that

occasion by men who had known and loved Sedgwick have never been reprinted; and that in this paper no long quotations can be made from them. One extract may be permitted—the few lines in which Dr Thompson, Master of Trinity College, summed up, in his happiest manner, the characteristics of his aged friend:

> "Who can forget the fervour of his eloquence, his racy wit and humour, the masculine vigour of his intellect, and his unrivalled power of narrative? There is only one word at all adequate to describe his varied powers, and this word is 'Genius'."

The eloquence of that day was succeeded by the more prosaic labours of a hard-working committee, who before many months were over had collected a sum of money which ultimately, before the Museum was begun, amounted, with interest, to £26,125. In the case of most buildings, when money has been provided, all difficulties vanish; but in the case of the Sedgwick Museum, they seemed to increase year by year, as the site and the extent of the building were debated, and successive architects were consulted. At last, however, the noble building which is opened to-day by His Majesty the King, was erected from the designs of T. G. Jackson, R.A., architect.

Skilfully designed, and carefully executed, it will enable us to display the finest educational collection in the world. This was what Woodward aimed at in his day of small beginnings, and what Sedgwick worked for during his whole academic career. The great

Museum occupies the first-floor of both wings, and amid the long series of specimens which scientific Geology has revealed to us, Woodward's ancient cabinets are piously preserved in a small enclosure special to themselves. On the ground-floor are the products of the earth's crust which are of economic value, with a large lecture-room. On the second-floor are class-rooms, and private-rooms for the different teachers, with the noble library, the fittings for which were provided by the liberality of the late Master of Trinity Hall. In the attics are more rooms for research, and large store-rooms where specimens can be unpacked, sorted, and determined before they are placed in the Museum.

In a niche of the wall which divides the principal Museum stands Sedgwick's statue, which we owe to the liberality of his friend the Reverend William Selwyn, Lady Margaret's Professor of Divinity. We may fancy, as he stands there, hammer in one hand and a specimen in the other, that he is pleased at the realisation of the hopes which had animated his long life. The words I am about to quote were dictated by him only three months before his death:

> There were three prominent hopes which possessed my heart in the earliest years of my Professorship. First, that I might be enabled to bring together a Collection worthy of the University, and illustrative of all the departments of the Science it was my duty to study and to teach. Secondly, that a Geological Museum might be built by the University, amply capable of containing its future Collections; and lastly, that I might bring together a

Class of Students who would listen to my teaching, support me by their sympathy, and help me by the labour of their hands.

The answer to those words is before us in the collections and the building, which are opened to-day; and in the body of students which throng our lecture-rooms and class-rooms.

T. M^{c}KENNY HUGHES.